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Indian Standard

LEATHER — MEASUREMENT OF THICKNESS OF SURFACE COATING ON LEATHER — METHOD OF TEST

भारतीय मानक

चमड़ा — चमड़े के ऊपर की सतह पर किये गये पालिश की मोटाई को नापना — परीक्षण पद्धति

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

December 1989

Price Group 1

Leather Sectional Committee, CDC 16

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards on 31 March 1989, after the draft finalized by the Leather Sectional Committee had been approved by the Chemical Division Council.

Surface coating is applied on leather to protect or enhance the outer or wearing surface.

Traditionally, the thickness of surface coating used to be less than 0·02 mm. However, with the recent technical developments, the thickness of surface coating has gone beyond 0·1 mm, largely due to the production of laminates or the application of much thicker coatings.

In the preparation of this standard, considerable assistance has been derived from Amendment No. 3 to BS : 3144-1968 'Method of sampling and physical testing of leather', issued by the British Standards Institution, U.K.

Indian Standard

LEATHER — MEASUREMENT OF THICKNESS OF SURFACE COATING ON LEATHER — METHOD OF TEST

1 SCOPE

1.1 This standard prescribes the method for measuring the thickness of the surface coating applied to leather of all types including grain, corrected grain, splits and sueded surfaces.

2 REFERENCES

IS No.	*Title*
IS 5914 : 1970	Method of physical testing of leather

3 TERMINOLOGY

3.0 For the purpose of this standard, the following definition shall apply.

3.1 Thickness

Thickness of the coated layer measured relative to the outer surface of the coating in terms of the graduation on a stage micrometer viewed through a microscope having a minimum magnification of 15 X.

4 PRINCIPLE

4.1 Either a cut perpendicular to the finished surface is made through a specimen of leather or a microscopic section is cut using a simple hand microtome. The cut or section is then examined by means of a binocular microscope using a stage micrometer.

5 APPARATUS

5.1 Binocular microscope with a minimum magnification of 15 X, incorporating an eye piece graticule and top lit stage for surface illumination of the leather section.

5.2 Stage micrometer to calibrate the eye graticule at the particular magnification used.

6 PREPARATION OF TEST PIECES

6.1 Make a section perpendicular to the finished surface of the leather with either a sharp scalpel or a blade set in a wooden block. Place the cutting edge on the finished surface and press through the whole substance of the leather ensuring that the blades remain vertical.

6.2 For the microscopic section, place a piece of leather between the two halves of a cork, insert in a microtome and slice sections using a sharp razor.

NOTE — Care should be taken to ensure that the section taken is perpendicular to the surface under consideration.

6.3 Take three sections as described in **5.1** and **5.2**, as appropriate.

NOTE — On leather cutting the sections should not be taken from within 50 mm of the edge of the original skin or hide and should be spaced at least 100 mm from one another. Where the sections are taken from made-up footwear, each should be cut from different part of the upper and away from areas which have been subjected to significant straining. Care should be taken to avoid the use of damaged leather.

6.4 Condition the test pieces according to the method prescribed in LP : O of IS 5914 : 1970.

7 PROCEDURE

7.1 Through the eyepiece, view the top lit section. Rotate either the eyepiece or the section until one of the major graduations is aligned with the bottom surface of the coating. Where the coating/leather interface undulates, the graduation should be positioned such that it lies midway between the crust and troughs as shown in Fig. 1. Measure the coating in terms of the graduations relative to the outer surface of the coating. Repeat the test for the remaining two test pieces.

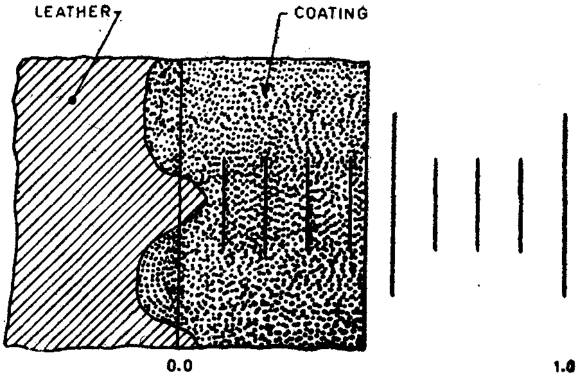

FIG. 1 POSITIONING OF GRADUATIONS

7.2 Place the stage micrometer under the microscope and calibrate the eyepiece scale in terms of the known graduations of the stage micrometer. Calculate the thickness of the coatings on each of the three sections to 0·01 mm. Calculate the average and report to the nearest 0·01 mm.

NOTE — An approximate assessment of coating thickness may be made by means of a magnifying lens incorporating a graduated scale. The leather section preparation is identical to that described in **5**. Ensuring that the section is in focus and well lit, align one of the major scale graduations with the bottom of leather coating. The thickness of the coating may then be determined by reading the scale where it is coincident with the top surface (where the coating/leather interface undulates, the alignment is made at a position which represents the average boundary position). This method, however, give a coating thickness accurate only to the nearest 0·05 mm.

8 REPORT

Report the average of the three coating thicknesses measured to an accuracy of 0·01 mm.

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